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ABSTRACT

The University of North Dakota's Global Rural Autism Asperger Information Network (GRAAIN) provides a special graduate certificate program in Autistic Spectrum Disorder (ASD) consisting of six online courses. The program started over 4 years ago as a pilot program to provide specialized ASD training to educators and personnel serving children with ASD in remote, rural regions. The program uses a distance learning delivery model involving use of a computer with Internet access, CD-ROM, audio capabilities, a video camera, and a printer. Class lectures are posted on the course Web site as RealPlayer movies. Students view these lectures, complete assigned readings and other related activities, and participate in one 45-minute synchronous chat session each week and asynchronous discussion forums throughout the semester. Grades are derived from chat session participation, discussion forum participation, and independent project completion. Projects involve direct work with children with ASD or their family members. Projects are videotaped and shared with the class via the class Web site. The program relies on a multidisciplinary approach to teaching and includes guest lectures from national or international leaders in the field of ASD. Courses have either a person with ASD or a parent of such a person as a co-teacher. Co-teachers work with faculty to design, deliver, and revise course activities. Student course evaluations have been very positive. Lessons learned are discussed. (TD)

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GLOBAL RURAL AUTISM ASPERGER INFORMATION NETWORK: A DISTANCE LEARNING INSERVICE TRAINING PROGRAM

"I really enjoyed being able to take such a high quality course online."

"I loved the power point lectures off the Internet. It was so nice not to have to go to the campus. The on-line assignments were great."

"The chat sessions were very beneficial to hear different opinions and information. A lot was gained through this format. The discussion board threads had you not only think of the diagnosis for each case study, but then take into consideration others' views."

The preceding comments are typical of those we hear from the online students who participate in our distance learning autistic spectrum disorder (ASD) training program. These students work with children with ASD and/or their family members. Thus, our students represent an array of experienced professionals (e.g., speech and language pathologists) who work in remote, rural communities throughout the northern great plains. As is the case with most professionals who work in rural communities, our students are generalists rather than specialists (Boe, 1993; Helge, 1984; & Rios, 1987). Consequently, their need for highly specialized training in the area of ASD can't be overstated.

The Global Rural Autism Asperger Information Network (GRAAIN) provides access to just such training. This is a graduate level, professional development program. Its purpose it to provide *Highly specialized training focusing on research-supported interventions* (Bock & Wernau, in press; National Research Council, 2001) *for early intervention personnel, general and special educators, and related services personnel* who serve children with ASD and their families in *remote, rural regions* of the United States. More specifically, this program builds participants' (a) knowledge regarding ASD, (b) skills to work effectively with persons with ASD, and (c) skills to collaborate effectively with other caregivers and family members who serve these persons.

This program uses a distance learning delivery model, i.e., involving use of a computer with Internet access, CD-ROM, and audio capabilities, a video camera, and a printer. Class lectures are posted on the course Web site as RealPlayer movies. Students view these lectures, complete assigned readings and other related activities, and participate in one 45-minute synchronous chat session each week and asynchronous discussion forums intermittently throughout the semester. Grades are derived from chat session participation, discussion forum participation, and independent project completion. Projects involve direct work with children with ASD and/or their family members. Projects are videotaped and shared with the class via the class web site.

GRAAIN Training Program Faculty

Currently four faculty members teach in this certificate program: Drs. Marj Bock, Don Daughtry, and Karen Hurlbutt as well as Ms. Phyllis LeDosquet, doctoral candidate. Their backgrounds include special education and music therapy, counseling psychology, social work and special education, and early childhood

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special education and visual impairment, respectively. In addition, numerous faculty members from the University of North Dakota serve as guest lecturers for these courses.

GRAAIN Training Program Elements

Multidisciplinary. This program relies on a multidisciplinary approach to facilitate training. From course development to course delivery, this multidisciplinary approach is evident. To date, participants represent the fields of early childhood education, early childhood special education, general education, special education, speech and language pathology, occupational therapy, physical therapy, school psychology, educational administration, recreational therapy, and clinical psychology.

Autistic Spectrum Disorder Graduate Certificate. The University of North Dakota issues a special graduate certificate in Autistic Spectrum Disorder. This program requires successful completion of 12 graduate credits, 8 required and 4 elective. The required courses follow:

1) T&L 560 *Introduction to Autistic Spectrum Disorder (2 credits, graduate)*
2) T&L 561 *Methods for Autistic Spectrum Disorder (2 credits, graduate)*
3) T&L 562 *ASD: Supports Across the Lifespan (2 credits, graduate)*
4) T&L 563 *ASD: Medical Issues and Trends (2 credits, graduate)*

The elective courses offered by the University of North Dakota follow:

1) T&L 564 *Structured Teaching (2 credits, graduate)*
2) T&L 565 *Methods for Students with Asperger Syndrome (2 credits, graduate)*

All six courses are offered via the Internet only.

National Professional Development. Since this program uses an Internet delivery model, participants come from anywhere in the nation. Thus, this program facilitates resource sharing nation-wide. For instance, the Minnesota Department of Children, Families, and Learning has developed a manual to provide additional training for paraeducators who work with children with ASD. Several participants from Minnesota have shared this manual with participants from North Dakota and South Dakota.

Co-Teachers. Each of the courses in this program has either a parent of or a person with ASD as a co-teacher. The co-teachers work with faculty to design, deliver, and revise course activities. They share resources with faculty members and participants. Participants often mention how beneficial these co-teachers are to the overall worth of each course.

CD-ROM Teaching Demonstrations. The faculty member and co-teacher develop a CD-ROM for most courses in this program. These provide demonstrations of research-supported interventions (e.g., applied behavior analysis, structured teaching, use of visual symbols) and formal and informal assessment instruments and processes. While these CDs help participants learn to effectively use these techniques, participants tell us that they are using the CDs to train their paraeducators and others who work with children with ASD.

Living Case Histories. One of the unique training challenges we face when providing professional development in such remote, rural regions is the lack of access to multiple persons with ASD. We developed the concept of living case histories to address this need. Thus we are currently developing between three and four living case histories for each of our courses. These will include video clips, assessment reports, and interviews with family members of and professionals who work with a child with ASD. We will check back in on these families every three years to get an update on the child's progress. Of course family members can decline to participate in this project at any time and their Living Case History will be deleted from the class Web site. Although we're just beginning to develop these, their power as an instructional approach for our program really can't be overstated.

Idea Exchange. We have 45-minute synchronous chat sessions once a week for each of our courses. We spend the final 15 minutes of each chat session discussing one of the participant's students. The participant provides descriptive information (without identifying the child) and the nature of the issue or problem the child presents.

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Peers pose questions. They then brainstorm plausible solutions relying on research-supported interventions with suggested data collection systems to facilitate data based decision making for each plausible intervention. The instructor and co-teacher guide these discussions as needed.

Guest lecturers. Each course includes guest lectures from up to 6 national or international leaders in the field of ASD. These lectures ensure the multidisciplinary approach to the course as well as enrich the course content.

Field Experience Activities. Each course in this program contains independent projects that require participants to work directly with a person with ASD and his or her family. Thus the related field experiences for this program are actually embedded in the program coursework.

Family Member Audit Passes. Finally, we issue up to 6 family members a year "Audit Passes." These allow the family member to audit one of our courses at not cost as room permits. This facilitates the development of collaborative relationships between family members of persons with ASD and the professionals who work with these persons and their families.

GRAAIN Training Program Quality Indicators

Student Enrollment and Course Evaluation Data. In August of 2003 our first group of participants will complete this certificate program. Thus we do not yet have summative program evaluation data. However, to date **142** students have taken at least *one* course in this program. **Eighteen** of these have taken *two or more* courses. In August 2003, **eleven** of these will complete the program and receive an ASD Graduate Certificate from the University of North Dakota. **Ninety-two** participants are *North Dakota residents*, **thirty-six** are *Minnesota residents*, **nine** come from *other states* within the United States, and **five** are *Canadian residents*. Approximately **45%** of our students are *special educators* (K-12), **20%** are *early childhood special educators* (3 to 5 years of age), and the remaining **35%** are *speech and language pathologists, occupational therapists, physical therapists, recreational therapists, school social workers, school psychologists*, and *special education directors*. It should be noted that we have one clinical psychologist in the program who plans to receive his certificate in December of 2003. We have also had a few university professors and one researcher take these courses. To date only **four** students enrolled in courses have dropped *any* of our courses.

The student course evaluations used by the University of North Dakota solicit survey responses to seventeen statements (i.e., strongly agree, agree, neutral, disagree, and strongly disagree) as well as short answer responses to two or more open-ended questions. The survey statements and open-ended questions follow:

1) This instructor is an excellent teacher.
2) I was challenged to think by this course.
3) The course was well organized.
4) Instructor appears to have a thorough grasp of subject matter.
5) Textbook (or other materials) was useful for this course.
6) Students felt free to ask questions or express opinions.
7) Instructor was willing to meet with students outside of class.
8) Instructor treated all students fairly and with respect.
9) Learning objectives and assignments were clear.
10) Instructor explained subject matter clearly.
11) Instructor is committed to high quality teaching.
12) Credit given for course was commensurate with work required.
13) Instructor informed students how they would be evaluated.
14) Instructor gave helpful feedback on assignments/exams.
15) Instructor graded assignments and exams fairly.
16) I would recommend this course to other students.
17) I would recommend this instructor to other students.
18) Describe and explain several aspects of this course that promoted your learning.
19) Describe and explain several aspects of this course that could be changed to increase student learning.
20) On the back add any other comments that you would like to make about this course or the instructor.

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To date, **100%** of our students either *strongly agree* or *agree* with survey items 1-6 and 8-17 with the vast majority of them *strongly agreeing* with each statement. Survey item 7 states, "Instructor was willing to meet with students outside of class." To date this item has received responses indicating that students *strongly agree*, *agree*, or are *neutral* in regard to the statement. The neutral responses on this statement lead the instructor's to believe that some student's aren't sure how to interpret the question when it is applied to distance learning courses.

In addition, the following narrative comments typify those students provide via the course evaluations:

"The written case study was a learning tool in itself. All the assignments help me in my program and teaching."

"Having a parent as a co-teacher [for this course] was an excellent idea. [She] was able to give us very valuable insight into what family life is like with a child diagnosed with autism."

"The living case history is WONDERFUL. Thank you to the parent co-teacher for her willingness to share this with us."

"I am currently taking my first course through the University of North Dakota's distance learning program. I can already see the benefits that the class has had, in the way I am working with students and planning/structuring their day. If this course were not available on-line, I would not have been able to take the course and learn new ideas/techniques that make me and will continue to make me a more effective teacher."

"Taking the Autism Spectrum Disorder classes online from the University of North Dakota has been one of the most rewarding experiences I have ever had from a graduate course. I will continue to take all the course[s] in the series. I'll always look back on what a positive experience these courses have been."

University of North Dakota Graduate Program Review. In addition to review from outside professional accreditation bodies (e.g., CEC), all graduate programs at the University of North Dakota complete an internal program review every seven years. This review is conducted by members of the Graduate Committee under the direction of the Graduate School Dean. The purpose of this internal review is to ensure that all graduate programs meet the University standards for graduate degree programs.

Lessons We've Learned Along the Way

Distance Model Development. The first step toward development of any distance program is the distance model development. The model must involve use of technology to which prospective participants have ongoing access. It must also involve use of technology that will facilitate the training program content (e.g., teaching demonstrations, sharing of student projects). And finally, the model must be "workable" for the faculty who will teach in the program. Personnel who work at the University of North Dakota AeroSpace Network helped develop the distance learning model currently used for GRAAIN.

Mr. Henry Borysewicz, Director of the AeroSpace Network, attended numerous meetings where the multidisciplinary team of faculty designing GRAAIN coursework discussed the needed content, references, learning activities, and student assignments. He posed numerous questions during these meetings. He sought clarification regarding our targeted participants, where they lived, and the technology to which they had ongoing access. This led to the development of a distance model that worked in rural regions of the Nation, that involved technology to which our students had ready access, and that was financially feasible for our students. Clearly this has helped us successfully market GRAAIN.

During these meetings, Mr. Borysewicz often said," Tell me what you need, Marj, and we'll figure out how to do it." He and his staff did just that. There was literally no challenge, including helping our blind faculty member access the Internet and aptly teach class via the class Web site, too great for the AeroSpace Network staff. Certainly there are many other ways to deliver the GRAAIN training, but we have learned from Mr. Borysewicz and his staff the importance of relying on "low" rather than "high" technology for our distance model and designing the model to

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fit the course content. Any future revisions in our distance model will occur only following additional consultation and guidance from the UND AeroSpace Network staff.

Online Learning Support. Critical to daily operation of any online program is ready access to technology support, for faculty and students both. As Dr. Karen Hurlbutt, one of our GRAAIN instructors, notes:

"As you know, the course that I teach is called *Methods for Teaching Students with Asperger Syndrome* . . . . This past fall was the first time this course was offered and it is a mild understatement to say that I could not have done it without the incredible support and assistance from the staff at CILT (the Center for Instructional and Learning Technologies). They trained me on how to use the course Web site, how to record audio power point lectures, how to upload Word documents for students' use, and how to set up various files, to name just a few tasks. They responded almost immediately whenever I had a question or problem or needed some advice. What a great asset they are to us for our online courses!!"

At the University of North Dakota, CILT is one of the technology support groups available to faculty. Offering an array of services, Dr. Kathy Smart and CILT staff provide comprehensive support to faculty for the design, development, implementation, and evaluation of technology-enhanced face-to-face and on-line courses and programs. CILT staff pride themselves on the provision of service 24 hours a day, 7 days a week. There are eight full-time professional staff with expertise in instructional design, project management, graphic design and photography, video, multimedia production, webpage development, and presentation technology. Consequently GRAAIN faculty rely upon CILT staff to help them: (a) develop the course Web site, (b) design online learning activities, and (c) resolve technical difficulties that arise during the course. CILT is fully funded by appropriated dollars that are a part of the University general operating budget. Thus their services are offered to faculty free-of-charge through the UND division of Academic Affairs.

Technical support for students enrolled in online courses is also crucial. Students enrolled in GRAAIN coursework receive technical support from the UND College of Education and Human Development Technology Coordinator, Ms. Joneen Iverson. Through one-on-one support Ms. Iverson helps students: (a) Install needed plug-ins (e.g., RealPlayer, Adobe Acrobat), (b) access and use the course Web site, (c) access the course chat program, and (d) resolve technical difficulties that arise throughout the course. She also provides immediate support during the synchronous chat sessions for any student experiencing technical difficulties. Her clear directions as well as positive rapport with students are often mentioned as one of the strengths of the course on student course evaluations. In essence Ms. Iverson functions much like a team-teacher with GRAAIN faculty members (Ko & Rossen, 2001). The Technology Coordinator position is fully funded by appropriated dollars that are a part of the College general operating budget. Thus her services are offered to College students (and faculty) free-of-charge.

GRAAIN Program Funding. Online programs require additional equipment and so can be more expensive than on-campuses programs (Bates, 2000). A separate budget derived from student tuition supports the GRAAIN program. This budget covers all needed supplies and equipment. It covers overtime salaries for some of our technical support personnel. Further, it covers our co-teachers' salaries as well as stipends of appreciation for our guest lecturers. Finally, while three of the six courses in this program are taught as a part of regular faculty load, the remaining three are taught during the summer. This budget covers the teaching salaries for these remaining three courses. The budget is renegotiated every two years.

Summary

Starting as a pilot program to provide specialized ASD training to educators over four year ago, GRAAIN has grown into a successful Graduate Certificate Program consisting of six online courses. It *is* possible to create and sustain a quality online program if included in that program are; (a) knowledgeable faculty in the discipline, (b) partnerships with reliable and consistent technical support (Chute, et. al, 1997), (c) sound online pedagogy, (d) secure financial planning, (e) college and university based support, and (f) highly motivated students. The technology used in the course must be "available to and useable by all participants" (Palloff & Pratt, 1999). By recognizing a need, gathering a team of educators, technicians, designers, planners and developing a training program GRAAIN has not only made a significant contribution to the field of autistic spectrum disorders, but has also influenced distance education for other highly specialized training specific to low incidence disabilities.

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Consequently, we anticipate that the GRAAIN model may be applicable to training needs for educators working with persons with low incidence disabilities.

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